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10/563,299

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EXAMINER

FREEMAN, JOHN D

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

04/15/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/563,299             | YOSHIDA ET AL.      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | John Freeman           | 1794                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

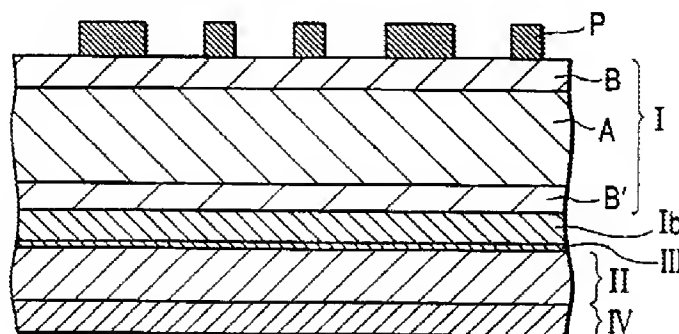
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|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/06</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

**DETAILED ACTION*****Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-9, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6,013,363) in view of Kajimaru et al. (US 2002/0061959).
3. Takahashi et al. (hereafter Takahashi) discloses the following laminate structure in Fig. 3:



4. The relevant layers are defined as follows (col 6 ln 62-65; claim 16):
- (I) is a microporous resin film base layer,
  - (Ib) is a primer layer,
  - (II) is a gas barrier resin film layer,
  - (III) is an inorganic thin film layer,
  - (IV) is a heat sealable resin layer, and
  - (P) is a print layer.
5. The laminate has the following properties (col 1 ln 60-65):
- (i) the laminate has a water vapor permeability (JIS Z-0208) of  $5 \text{ g}/(\text{m}^2 \cdot 24 \text{ hr})$  or less, preferably  $2 \text{ g}/(\text{m}^2 \cdot 24 \text{ hr})$  or less; and
  - (ii) the laminate has an oxygen permeability (JIS Z-1707) of  $5 \text{ cc}/(\text{m}^2 \cdot 24 \text{ hr} \cdot \text{atm})$  or less, preferably  $2 \text{ cc}/(\text{m}^2 \cdot 24 \text{ hr} \cdot \text{atm})$  or less.
6. The gas barrier resin film comprises polyesters (col 5 ln 17-19).

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7. Takahashi is silent with regard to the glass transition temperature, molecular weight, and hydroxyl value of the polyester used for the gas barrier resin film.

8. Kajimaru et al. (hereafter Kajimaru) disclose a polyester resin having high waterproofness, and useful as a coating [0001-4]. The polyester resin has a hydroxyl value of less than 30mg KOH/g [0035] and a molecular weight of 9,000 or more [0009]. Kajimaru discloses the polyester resin has glass transition temperatures in the range of 40-100°C, thereby overlapping with Applicant's range [0036]. Example embodiments of the resin have glass transition temperatures within the range claimed by Applicant (p10, Table 1). As set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). The examiner notes Kajimaru's polyester resins comprise terephthalic acid, isophthalic acid, ethylene glycol, and neopentyl glycol [0122], just as Applicant discloses in Example 1 (p31 of the present specification).

9. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Kajimaru's polyester resin as the gas-barrier in Takahashi's laminate to improve the waterproof qualities of the barrier.

10. This table describes which layers of Takahashi correspond to a given layer of Applicant:

| Applicant                        | Takahashi                   |
|----------------------------------|-----------------------------|
| Plastic substrate                | (I) microporous base layer  |
| Inorganic thin film              | (III) Inorganic thin film   |
| Polyester-based coating material | (II) Gas barrier resin film |
| Anchor coat layer                | (Ib) Primer layer           |

11. Regarding claim 2:

12. The (I) microporous base layer comprises a synthetic paper made of polyethylene, polyamides, or polyethylene terephthalate (col 4 ln 21-24).

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13. Regarding claims 4-5:

14. Kajimaru discloses isocyanate curing compounds for use in the polyester resin to improve processing, waterproofness, and solvent resistance [0078]. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use an isocyanate curing compound in Takahashi to improve processing, and waterproofness, and also keep the hydroxyl value of the isocyanate approximately the same as the value of the polyester to ensure the waterproof property of the layer.

15. Regarding claims 6-7:

16. Takahashi teaches an inorganic film having a thickness of 5-600nm, thereby overlapping with Applicant's range (col 5 ln 36-37). As set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

17. The film can be chemically vapor-deposited (CVD) (col 5 ln 64) and comprises aluminum oxide or silicon oxide (col 5 ln 38).

18. Regarding claims 8-9:

19. As mentioned the primer layer corresponds to Applicant's anchor layer. The primer comprises polyurethane (col 6 ln 27).

20. Regarding claims 12-15:

21. Since the laminate created by the combination of Takahashi with Kajimaru comprises the same layers as Applicant describes, the examiner takes the position that the laminate would intrinsically possess the properties as described in the present claims 12-15.

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22. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6,013,363) in view of Kajimaru et al. (US 2002/0061959) as applied to claims 1-2, 4-9, and 12-15 above, and further in view of Hall et al. (US 2002/0009564).

23. Takahashi in view of Kajimaru is previously described.

24. Both references are silent with regard to a fatty acid, fatty ester, or fatty amide being added to the polyester resin layer.

25. Fatty acid amides are well-known slip additives to polyester, however, as evidenced by Hall et al. [0002].

26. At the time of the invention, it would have been obvious to one of ordinary skill in the art to add fatty acid amides to the polyester resin layer to improve its slip and, therefore, handling properties. Given that the range claimed by Applicant is so broad, one of ordinary skill would have naturally arrived at values within the range during routine optimization of the amount used.

27. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6,013,363) in view of Kajimaru et al. (US 2002/0061959) as applied to claims 1-2, 4-9, and 12-15 above, and further in view of Powell et al (US 5,427,235).

28. Takahashi in view of Kajimaru is previously described. Given that claim 11 of the present application allows for layers disposed between the printed layer and heat seal layer, while describing the heat seal layer as being on the surface of said printed layer, the examiner considers the printed layer (P) to be on a surface of the (II) gas barrier layer, which corresponds to the polyester-based resin coating layer.

29. Both references are silent with regard to a printed layer having a heat seal layer thereon.

30. Applying a heat seal layer to a printed layer was well-known in the packaging art, however. For example, Powell et al. disclose a heat seal layer applied to a printed surface (Abstract, col 4 ln 64-65).

31. At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply a heat seal layer to the printed layer (P) disclosed by Takahashi to create a new sealing surface as needed to protect the print layer.

***Claim Rejections - 35 USC § 112***

32. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

33. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

34. The term "thin film" in claim 1 is a relative term which renders the claim indefinite. The term "thin" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how thick the layer must be to qualify as being a "thin" layer.

35. The term "molecular weight" in claim 1 is a relative term which renders the claim indefinite. The term "molecular weight" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. There are many standards for determining the molecular weight of a polymer including the weight average molecular weight, and number average molecular weight. Applicant does not make clear which standard should be used in the present case.

36. The term "biodegradable" in claim 2 is a relative term which renders the claim indefinite. The term "biodegradable" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Most polymers are degradable given a long enough timeline, therefore it is unclear which polymers would fall under this description.

37. Claim 12 recites the limitation "the anchor coat layer" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim. Applicant makes no mention of an anchor layer in independent claim 1. Applicant discloses an anchor layer in claims 8-9.

38. Claim 14 recites the limitation "the anchor coat layer" in line 4 of the claim. There is insufficient antecedent basis for this limitation in the claim. Applicant makes no mention of an anchor layer in independent claim 1. Applicant discloses an anchor layer in claims 8-9.

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39. Claim 15 describes the adhesion strength "between the printed layer or the polyester-based resin layer" in line 3 of the claim. The use of "or" in the phrase makes the claim indefinite. The examiner interprets this as a typographical error intended to read "between the printed layer *and* the polyester-based resin", support for which is found on p25 ln 20+ of the specification.

### ***Conclusion***

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Komiya ('561), Gough ('886), Lofgren ('534), Maekawa (JP '422), Wood ('282) all disclose multilayer articles comprising polyester layers and inorganic films. The machine translation of Noboru (JP '192) is included because it discloses polyester resins with the glass transition temperatures, and molecular weights as described by Applicant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Freeman whose telephone number is (571)270-3469. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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